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Amendments to the Specification:

Please amend the specification as follows:

Applicants will use both the page and line designation and a copy of the numbered paragraphs as numbered in the USPTO publication of the specification US 2005/0214168A1.

On page 13, line 14, insert ... , as shown in Figure 3, ... after the term "analyte 80 in the particles 124". Substitute paragraph [0045], in which these changes, appear, reads as follows:

[0045] The measurement of the analyte **80** in the particles124, as shown in Figure 3, is accomplished as follows. A wire electrode **440** in the ALC **400** is set to a positive potential, and an analysis-liquid pump (ALP) **414** connected to the ACL **400** increases the pressure on the analysis liquid **800**, so that a small amount of the analysis liquid **800** protrudes through a hole **430** in the ALC **400** to form a charged-volume of the analysis liquid at the hole (CVALH) **450**. A pump **190** creates a vacuum in an airtight box **140** and thereby draws gas **120** and particles **124** through an induction port **126**, then into a article counter **290** that counts the particles entering the APA **100**, then into a charger **250** that imparts a negative charge to the particles **124**, then into an airtight box **140**, then past the CVALH **450**, and then exhausts at least the gas **120** out of an exit port **128**. As the gas **120** and particles-**124** flow through the airtight box **140**, at least some of the particles **124** collide with the CVALH **450** and combine with it so that the analyte **80** in the particles **124** can be measured. Electrostatic forces increase the fraction of the particles **124** that combine with the CVALH **450**. The particles **124** are given a negative charge by the charger **250** so that they are drawn toward the positively charged CVALH **450** by electrostatic forces. When the CVALH **450** is negatively charged the particles **124** are given a positive charge by the charger **250** so they are drawn to the CVALH **450**. A shield electrode [[**490**]] **480** around the hole **430** is given a voltage opposite to that of the CVALH **450**, and of much smaller magnitude than the voltage applied to the CVALH **450**, so that particles are not attracted to this region around the hole **430**, but to the CVALH **450**. More than one particle **124** may combine with the CVALH **450**. If one or more of the particle(s) **124** that mix with the CVALH **450** contain some analyte **80**, the

fluorescence of the CVALH **450** begins to change in accordance with the amount of the analyte **80**. After a time sufficient for the analyte **80** to react with the analysis liquid **800** and to generate fluorescence, the fluorescence of the CVALH **450** is measured as explained below. The amount of the analyte **80** in the particles that collided with the CVALH **450** is determined from this measured fluorescence. Then the ALP **414** increases the pressure on the analysis liquid **800** in the ALC 400 so that a CVALH **450** is ejected and falls into a receptacle **470** at the bottom of the airtight box **140**.

On page 14, line 11, please change the term "shield electrode 490" to ...shield electrode **480**... as shown in the substitute paragraph [0045] above.

On page 14, line 17 at end of the line, change the term "analysis liquid 80" to read ...analysis liquid **800**...as shown in the substitute paragraph [0045] above.

On page 17, line 2, change the term "particle counter 190" to ... particle counter **290** ... as shown in substitute paragraph [0050] that follows.

[0050] A particle counter [[190]] **290** measures the concentrations of particles **124** in different size ranges drawn into the APA **100** so that when the APA **100** is calibrated the mass of the particles 124 that combine with the CVALH **450** can be estimated from a lookup table, so that the concentration of the analyte **80** in the particles can be determined from the measurements of the amount of analyte **80** in the particles 124 and the estimated mass of the particles **124** that combined.

On page 17, line 9, please change the term "shield electrode 442" to read ...shield electrode 480... as shown in the substitute amended paragraph [0051] that follows.

[0051] The ALC **400** with the hole **430**, the ALP **414**, and the electrode **440** with the shield electrode [[~~442~~]] **480** together comprise the analysis-liquid handling subsystem (ALHS) **456**. In one exemplar, the ALC 400_s near the hole 430_s is circular as in a typical capillary tube.

On page 20, line 20, change "Stem-2 822" to ...Stem-2 **824**... Please note that in the printed version, [0057], the Stem-#s through out the paragraph and the printed publication are not separated from the numeral identifying the part as shown in the substitute paragraph [0057] that follows.

[0057] FIG. 3 illustrates schematically one embodiment of the reaction that takes place in the CVALH **450** when analyte **80** is present in the particle **124** that combined with the CVALH **450**. **FIG. 3** shows how the fluorescence of the analysis liquid 800 changes, so that the fluorescence of the CVALH **450** varies with the amount of analyte **80** in the particles **124** that combined with the CVALH **450**. The example shown in **FIG. 3** is the same as that shown in **FIG. 6A** of an article by R.L. Nutiu and Y. F. Li, "Structure-switching signaling aptamers," Journal of the American Chemical Society, 125, 4771-4778 (2003), (herein incorporated by reference, especially **FIG. 6A**). In **FIG. 3**, the structure-switching signaling aptamer **820** is comprised of: (i) an aptamer (MAP) **822** chosen because it binds selectively to the analyte **80**, i.e., it acts as a sensor molecule, (ii) a DNA oligonucleotide, Stem-2_**824**, which is covalently linked to the MAP **822**; (iii) a DNA oligonucleotide, Stem-1 **826** that is covalently linked to Stem-2 [[~~822~~]] **824**; (iv) a fluorophore (F) **832**; (v) DNA oligonucleotide (FDNA) **834** that is linked to the fluorophore **832**; (vi) a quencher (0) **828**; and (vii) a DNA oligonucleotide (QDNA) **830** that is linked to the quencher 828.

[0058] The FDNA 834 forms the DNA duplex with Stem-1_**826**. The QDNA 830 forms the DNA duplex with Stem-2_**824**. In this structure-switching signaling aptamer **820**, the fluorophore **832** and the quencher **828** are held near each other and the quencher **828** quenches the fluorescence of the fluorophor **832**, so that the fluorophor **832**, fluoresces very weakly if at all. When the analyte **80** is present, the MAP **822** of the structure switching signaling aptamer **820** binds to the analyte **80** as illustrated in FIG. 3, and thereby releases the QDNA **830** so that the fluorophore **832** is no longer quenched, and can fluoresce brightly. In another exemplar, for cases where the analyte 80 is an oligonucleotide, the approach illustrated in FIG. 3 is used, but for these analytes 80 the aptamer (MAP) **822** is replaced by an oligonucleotide that is complementary to the analyte **80**. In another exemplar, the analysis liquid contains a molecular aptamer beacon as described by J. W. J. Li, X. H. Fang and W. H. Tan in, "Molecular Aptamer Beacons

for Real-time Protein Recognition," Biochemical and Biophysical Research Communications, 292 (I), 31-40 (2002), incorporated herein by reference. A description of methods for generating and using aptamers and molecular beacon aptamers is in U.S. Pat. No. 6,531,286 B2, "Homogeneous detection of a target through nuclic acid ligand-ligand beacon interactions," by S. Jayasena and L. Gold. In other exemplars, the sensor molecule may be, an antibody or a phage-displayed epitope or another protein, or it may be a nucleic acid selected to bind to a DNA or RNA sequence from the analyte organism.

On page 23, line 20, please change .... As shown in the substitute paragraph [0061] that follows.

[0061] Although only the measurement of the fluorescence intensity is described here in detail, other fluorescence properties such as the fluorescence polarization, the fluorescence spectrum, and the fluorescence lifetime can also be used in some embodiments of the APA **100**, and methods for measuring these properties are well enough known, that more does not need to be stated here. Also, methods for measuring other optical properties such as light scattering properties related to, for example, the measured polarization, spectral intensity, and angular-dependent intensity, have been described by other researchers. Although only the measurement of one analyte is described here in detail, the extension to the measurement of multiple analytes using multiple recognition molecules and multiple fluorophors that have different emission spectra is similar enough to what has been done in other analyses. Also, multiple recognition molecules can be used to detect multiple sites on the same analyte, as is well known. The use of electrostatic forces to deflect charged particles or droplets into different containers, depending upon some measured property of the droplet, e.g., using chargeable deflection plates, is known and has been used with flow cytometry; the sorting of charged droplets of the analysis liquid [[**460**]] 450 using electrostatic deflection after they are ejected can also be used with this invention.